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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/687,668	10/13/2000	Christopher J. Stakutis	0102396-00010	7984

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INTERNATIONAL BUSINESS MACHINES CORPORATION
5600 COTTLE ROAD, DEPT. L2PA/0142
INTELLECTUAL PROPERTY LAW
SAN JOSE, CA 95193-0001

EXAMINER

PARDO, THUY N

ART UNIT	PAPER NUMBER
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2175

DATE MAILED: 08/07/2003

10

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/687,668

Applicant(s)

STAKUTIS ET AL.

Examiner

Thuy Pardo

Art Unit

2175

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 June 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

1. Applicant's Amendment filed on June 02, 2003 in response to Examiner's Office Action has been reviewed. Claims 1, 3, 13, 18, and 18 have been amended and claims 27-30 have been added.
2. Claims 1-30 are presented for examination.
3. Applicant's request for reconsideration of the double patenting rejection of the last Office action is persuasive and, therefore, the rejection of that action is withdrawn.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-30 are rejected under 35 U.S.C. § 103 (a) as being unpatentable over **Vahalia et al.** (Hereinafter "Vahalia") U.S. Patent No. 6,389,420, in view of **Banga et al.** (Hereinafter "Banga") U.S. Patent Application No. 2001/0020248.

As to claim 1, Vahalia teaches the invention substantially as claimed, comprising: a first and second nodes coupled to one another over a communication pathway [see network 40 of fig. 2], the second node being coupled to a peripheral device over a communication pathway [46, 48 of fig. 2], a file system, executing on the first and second nodes, being capable of responding to access requests generated by the first node [33, 34 of fig. 2], pertaining to storage of the data designed by the request on the peripheral device [35, 36 of fig. 2]; determining meta data including block address maps to file data in the storage device [222 of fig. 10], and the first nodes being configured for accessing file data from the storage device using said meta data [425 of fig. 14], wherein said system comprises at least one first node that caches data including meta data for a file accessed by said first node [col. 5, lines 1-17], a file application on said first node configured to get requested file data by accessing said cached data for the file [col. 5, lines 24-35]. However, Vahalia does not explicitly teach a file notification system that sends a file change notification to said first node indicating changes affecting the cached data wherein the file application on the first node inspects the change notification to determine whether to get the requested file data directly using said cached data, whereby file accesses may be effected for an extended time with data locally cached at first nodes of the system. Banga teaches a file notification system that sends a file change notification to said first node indicating changes affecting the cached data wherein the file application on the first node inspects the change notification to determine whether to get the requested file data directly using said cached data 58, 59 of fig. 5; 0025 of page 2], whereby file accesses may be effected for an extended time with data locally cached at first nodes of the system [0062 of page 5-6].

Therefore, it would have been obvious to one of ordinary skill in the Data Processing art at the time of the invention to have modified the communication service system of Vahalia file system network for caching data including metadata for files which are distributed to clients provided thereof would have incorporated the teachings of Vahalia especially the notification indicating changes in cached data; the motivation being to expand and enhance the versatility of Vahalia's system by reducing the delay encountered in transmitting data from the network to the user and also making better use of caching capabilities of browsers [Banga, 0007, 0008 of page 1].

As to claim 2, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file application on said first node determines whether requested file data is subject to a change notification, and if so makes a further determination whether cached data at said first node remains valid for the requested file data [see the abstract].

As to claim 3, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file application on said first node determines whether requested file data is subject to a change notification [68 of fig. 7], and applies the cached meta data to directly mount the storage device to access the requested file when the cached data is not subject to a change notification [70, 72 of fig. 7].

As to claim 4, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file application on said first node further determines whether to directly

access the file data by applying cached meta data associated with the file to directly mount the storage device [35, 36 of fig. 1], or to issue a file request to the second node for valid file access meta data or data [col. 5, lines 20-25].

As to claim 5, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file notification system issues client-specific notifications limited to directories or portions of the file system that are to be accessed by each client [ab].

As to claim 6, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file notification system includes an interface layer with a storage system meta data controller for maintaining or acquiring administrative information pertaining to file size and storage locations [col. 17, lines 46 to col. 18, lines 7; col. 18, lines 65 to col. 19, lines 13].

As to claim 7, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file notification system runs on the second node and interfaces with a file system meta data controller to detect changes in file system storage data, issuing a file change notice in response thereto [col. 22, lines 37 to col. 23, lines 42].

As to claim 8, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file notification system limits number of change notifications for a given file to first n changes that occur, wherein n is a positive integer [col. 15, lines 32 to col. 16, lines 41].

As to claim 9, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file application on the first node implements a decision algorithm to determine whether to apply cached data for a requested file when the requested file is subject to a change notification. [67-72 of fig. 7].

As to claim 10, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file application on the first node intercepts reads and writes, and issues those directly to the storage device while exchanging messages over the communications pathway to permit coordinate file system management tasks performed by the second node [col. 22, lines 40-65; col. 16, lines 40-52].

As to claim 11, Vahalia and Banga teach the invention substantially as claimed. Banga further teaches that the file system management tasks performed by the second node include publication of change data [0025 of page 2].

As to claim 12, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the file shared access coordination system runs on the second node and interfaces with or includes a file system meta data controller interceding in response to at least a first selected file access request applied thereto by a file application on a first node, and transferring data designated by that request between the first node and the peripheral device in accord with current meta data maintained by the file system pertaining to storage of that data on the storage device such

that files may be directly transferred while maintaining file coherence and security [col. 17, lines 24-45].

As to claims 13, 15-17, all limitations of these claims have been rejected in the analysis of claims 1-7, 9-12 above, and these claims are rejected on that basis.

As to claim 14, Vahalia and Banga teach the invention substantially as claimed. Vahalia further teaches that the storage device is any of a disk drive, a "jukebox," other mass storage device or other mapped device [col. 5, lines 1-14].

As to claims 18-24 and 26, all limitations of these claims have been rejected in the analysis of claims 1-7, 9-12 above, and these claims are rejected on that basis.

As to claims 27-30, Vahalia and Banga teach the invention substantially as claimed. Banga further teaches that the file notification system runs on the second node and sends the file change notification to the first node, wherein the first node is registered with the second node for receiving the file change notification, wherein the file change notification includes changes to the data and the meta data [58, 59 of fig. 5; 0069, 0070 of page 6].

6. Further references of interest are cited on Form PTO-892 which is an attachment to this office action.

7. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy Pardo, whose telephone number is (703) 305-1091. The examiner can normally be reached Monday through Friday from 8:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dov Popovici, can be reached at (703) 305-3830.

The fax phone number for the organization where this application or proceeding is assigned are as follows:

(703) 746-7238	(After Final Communication)
(703) 746-7239	(Official Communication)
(703) 746-7240	(For Status inquiries, draft communication)

and/or:

(703) 746-5616 (*Use this Fax#, only after approval by Examiner, for "INFORMAL" or "Draft" communication. Examiner may request that a formal/amendment be faxed directly to them on occasions*).

Any inquiry of a general nature of relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 305-3900.

9. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 308-9051, (for formal communications intended for entry)

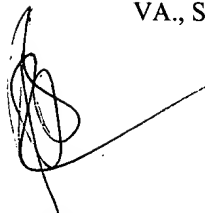
Or:

(703) 308-5359, (for informal or draft communications, please label

"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington.

VA., Sixth Floor (Receptionist).

A handwritten signature in black ink, appearing to be 'Thuy Pardo', with a long horizontal line extending to the right.

Thuy Pardo
August 06, 2003